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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/039,725	10/26/2001	Fred T. Clewis	CHA920010016US1	2238

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HOFFMAN WARNICK & D'ALESSANDRO, LLC
3 E-COMM SQUARE
ALBANY, NY 12207

EXAMINER	
ALI, MOHAMMAD	

ART UNIT	PAPER NUMBER
2177	5

DATE MAILED: 04/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/039,725	CLEWIS ET AL.	
	Examiner	Art Unit	
	Mohammad Ali	2177	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 October 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,5-9,12-16,19 and 20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 March 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The application has been examined. Claims 1-20 are pending in this Office Action.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The word "comprising" should not be used in the abstract. Appropriate correction is required.

Drawing objections

3. The drawings are objected to because they fail to show necessary textual labels of features or symbols in Figs. 1 and 2 as described in the specification. For example, placing a label, "pair", with elements 23, 27, of Fig. 1, would give the viewer necessary detail to fully understand this element at a glance. A *descriptive* textual label for *each numbered element* in these figures would be needed to fully and better understand these figures without substantial analysis of the detailed specification. Any structural detail that is of sufficient importance to be described should be shown in the drawing. Optionally, applicant may wish to include a table next to the present figure to fulfill this requirement. See 37 CFR 1.83. 37 CFR 1.84(n)(o) is recited below:
"(n) Symbols. Graphical drawing symbols may be used for conventional elements when appropriate. The elements for which such symbols and labeled representations are used must be adequately identified in the specification. Known devices should be illustrated by symbols which have a universally recognized conventional meaning and are generally accepted in the art. Other symbols which are not universally recognized may be used, subject to approval by the Office, if they are not likely to be confused with existing conventional symbols, and if they are readily identifiable.

(o) Legends. Suitable descriptive legends may be used, or may be required by the Examiner, where necessary for understanding of the drawing, subject to approval by the Office.

Information Disclosure Statement

4. The references cited in the IDS, PTO-1449, Paper No. 4, have been considered.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-2, 5-9, 12-16, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sayah et al. ('Sayah' hereinafter), US Patent 5,761,664 in view of Goldstein et al. ('Goldstein' hereinafter), US Patent 4,698,752.

With respect to claim 1,

Sayah discloses a graph walking system (see col. 12, lines 9-15, Fig. 4), comprising:

a binding system for binding a graph observer with a data graph, for binding node patterns to node observers to generate at least one node pattern/node observer pair, and for binding the data graph observer to at least one node pattern/node observer pairing, and wherein each node pattern includes a computed set of target sub-node patterns (see col. 12, lines 55-67, Figs. 5-6);

a node relationship graph (NRG), wherein each node in the NRG corresponds to at least one node in the data graph, and wherein each node in the NRG includes a computed set of valid sub-node patterns (see col. 12, lines 3-15);

graph walking logic for systematically walking through nodes in the data graph and corresponding nodes in the NRG (see col. 12, lines 8-10 et seq); and

a pattern testing system that determines if the set of target sub-node patterns for a node pattern matches the set of valid sub-node patterns for a corresponding NRG node when a node is encountered in the data graph (see col. 4, lines 40-50 et seq).

Sayah does not explicitly indicate the claimed graph walking.

Goldstein discloses the graph walking (accessing record to walk the directed graph to each of its roots and to lock each root, see col. 7, lines 31-33, Fig. 9, Goldstein).

It would have been obvious to one ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references, because the graph walking of Goldstein's teachings would have allowed Sayah's system to minimize the burden for lock-out in the file system in the transaction as suggested by Goldstein at col. 2, lines 12-16. Graph walking as taught by Goldstein improves to locking data bases to prevent multiple simultaneous modifications to a single data base entry (see col. 1, lines 9-10, Goldstein).

As to claim 2,

Sayah teaches wherein the set of target sub-node patterns includes at least one generational node pattern (see col. 12, lines 5-15 et seq).

As to claim 5,

Sayah teaches wherein the graph walking logic stores a list of node pattern/node observer pairs corresponding to matches made by the pattern testing system for each node (see col. 4, lines 40-50 et seq).

As to claim 6,

Sayah teaches wherein, for a root node, the pattern testing system tests each target sub-node pattern for all node patterns bound the graph observer, and adds a corresponding node pattern/node observer pair to the list of corresponding node pattern/node observer pairs for the root node (see col. 4, lines 40-50 et seq).

As to claim 7,

Sayah teaches wherein, for a child node, the pattern testing system tests each target sub-node pattern associated with the list of node pattern/node observer pairs stored for a parent node (see col. 4, lines 40-50 et seq).

As to claim 8,

Sayah teaches wherein the pattern testing system adds a corresponding node pattern/node observer pair to the list of corresponding node pattern/node observer pairs for the child node when a match occurs (see col. 4, lines 40-50 et seq).

With respect to claim 9,

Sayah discloses a system for optimizing a graph walking process of an inputted data graph based on inputted node patterns and a node relationship graph (NRG) that corresponds to the inputted data graph (see col. 4, lines 52-59 et seq), the system comprising:

a system for generating a set of valid sub-node patterns for each node in the NRG (see col. 12, lines 3-15);

a system for generating a set of target sub-node patterns for each inputted node pattern (see col. 12, lines 3-15 et seq);

a graph processor for systematically walking through nodes within the data graph and corresponding nodes in the NRG (see col. 4, lines 40-50 et seq); and

a pattern testing system that determines if the target sub-node patterns for a node pattern match the valid sub-node patterns for a corresponding node in the NRG when a node is encountered in the data graph (see col. 4, lines 40-50 et seq).

Sayah does not explicitly indicate the claimed graph walking.

Goldstein discloses the graph walking (accessing record to walk the directed graph to each of its roots and to lock each root, see col. 7, lines 31-33, Fig. 9, Goldstein).

It would have been obvious to one ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references, because the graph walking of Goldstein's teachings would have allowed Sayah's system to minimize the burden for lock-out in the file system in the transaction as suggested by Goldstein at col. 2, lines 12-16. Graph walking as taught by Goldstein improves to locking data bases to prevent multiple simultaneous modifications to a single data base entry (see col. 1, lines 9-10, Goldstein).

As to claim 12,

Sayah teaches wherein the graph processor includes a root node test, wherein the root node test tests all target sub-node patterns (see col. 4, lines 40-50 et seq).

As to claim 13,

Sayah teaches wherein the graph processor includes a child node test, wherein the child node test tests only target sub-node patterns associated with node patterns that had at least one match in a parent node (see col. 12, lines 3-15, Fig. 5).

With respect to claim 14,

Sayah discloses a method for analyzing a graph of hierarchical data (col. 12, lines 3-15, Fig. 2), comprising the steps of:

binding a plurality of graph observers to the graph, wherein each graph observer is further bound to a set of inputted node patterns and a set of inputted node observers (see col. 12, lines 3-15);

computing a set of target sub-node patterns for each inputted node pattern (see col. 4, lines 4-50 et seq);

providing a node relationship graph (NRG) for the graph, wherein each node in the NRG corresponds to a node in the graph (see col. 12, lines 3-15);

computing a set of valid sub-node patterns for each node in the NRG (see col. 6, lines 60-63 et seq);

systematically walking through nodes within the graph (see col. 4, lines 40-50 et seq);

testing to determine if the target sub-node patterns for a node pattern matches the valid sub-node patterns for a corresponding NRG node when a node is encountered in the graph (col. 4, lines 40-50); and

deactivating an identified graph observer for sub-nodes of an encountered node if none of the target sub-node patterns associated with node patterns bound to the identified graph observer match valid sub-node patterns (see col. 11, lines 61 to col. 12, lines 15 et seq).

Sayah does not explicitly indicate the claimed graph walking.

Goldstein discloses the graph walking (accessing record to walk the directed graph to each of its roots and to lock each root, see col. 7, lines 31-33, Fig. 9, Goldstein).

It would have been obvious to one ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references, because the graph walking of Goldstein's teachings would have allowed Sayah's system to minimize the burden for lock-out in the file system in the transaction as suggested by Goldstein at col. 2, lines 12-16. Graph walking as taught by Goldstein improves to locking data bases to prevent multiple simultaneous modifications to a single data base entry (see col. 1, lines 9-10, Goldstein).

As to claim 15,

Sayah teaches reactivating the identified graph observer after the sub-nodes of the encountered node have been walked (see col. 12, lines 3-15).

With respect to claim 16,

Sayah discloses a program product stored on a recordable medium, which when executed, optimizes a graph walking process of an inputted data graph based on inputted node patterns and a node relationship graph (NRG) that corresponds to the inputted data graph (see col. 12, lines 3-15, Fig. 5), the program product comprising:

means for generating a set of valid sub-node patterns for each node in the NRG (see col. 6, lines 60-63 et seq);

means for generating a set of target sub-node patterns for each inputted node pattern (see col. 12, lines 3-15 et seq);

means for systematically walking through nodes within the data graph and corresponding nodes in the NRG (see col. 12, lines 3-15 et seq); and

means for determining if the target sub-node patterns for a node pattern match the valid sub-node patterns for a corresponding node in the NRG when a node is encountered in the data graph (col. 4, lines 40-50 and col. 12, lines 3-15 et seq).

Sayah does not explicitly indicate the claimed graph walking.

Goldstein discloses the graph walking (accessing record to walk the directed graph to each of its roots and to lock each root, see col. 7, lines 31-33, Fig. 9, Goldstein).

It would have been obvious to one ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references, because the graph walking of Goldstein's teachings would have allowed Sayah's system to minimize the burden for lock-out in the file system in the transaction as suggested by Goldstein at col. 2, lines 12-16. Graph walking as taught by Goldstein improves to locking data bases to prevent multiple simultaneous modifications to a single data base entry (see col. 1, lines 9-10, Goldstein).

As to claim 19,

Sayah teaches wherein the determining means includes a root node test, wherein the root node test tests all target sub-node patterns (see col. 12, lines 3-15, Fig. 5).

As to claim 20,

Sayah teaches wherein the determining means includes a child node test, wherein the child node test tests only target sub-node patterns associated with node patterns that had at least one match in a parent node (see col. 4, lines 40-50, Fig. 2).

Allowable Subject Matter

7. Claims 3-4, 10-11 and 17-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record does not teach or fairly suggest in combination with other elements wherein, a graph observer pruning system for deactivating a graph observer for sub-node processing when no matches occur between target sub-node patterns and valid sub-node patterns for an encountered node as recited in claims 3, 10, and 17.

Claims 4, 11, and 18 are further limits of claims 3, 10, and 17 would be allowable for the same reasons.

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammad Ali whose telephone number is (703) 605-4356. The examiner can normally be reached on Monday to Thursday from 7:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on (703) 305-9790 or Customer Service (703) 306-5631. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306 for any communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9600.

Mohammad Ali

Patent Examiner

AU 2177

MA

April 22, 2004